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Signed

*Andrew Gensley*

Dated 17 June 2004

Patents Form 1/77

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27 FEB 2003

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27FEB03-EP00364-1 012133  
P01/7700 0.00-0304482.3**Request for grant of a patent**

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road  
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1. Your reference

566

2. Patent application number

(The Patent Office will fill in this part)

0304482.3

27 FEB 2003

3. Full name, address and postcode of the or of each applicant (underline all surnames)

INSTITUTE OF CHILD HEALTH  
30 GUILFORD STREET  
LONDON WC1N 1EH  
GB

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

8561037001

4. Title of the invention

BABY FEEDING SYSTEM

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

COHEN, ALAN NICOL  
2 GROVE PLACE  
TATSFIELD  
Nr. WESTERHAM  
KENT  
TN16 2BB

Patents ADP number (if you know it)

6963557001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number  
(if you know it)Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

YES

- a) any applicant named in part 3 is not an inventor, or
  - b) there is an inventor who is not named as an applicant, or
  - c) any named applicant is a corporate body.
- See note (d))

**Patents Form 1/77**

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description

Claim(s)

Abstract

Drawing(s)

3  
2  
1  
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10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 2/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature



Date 27/02/03

12. Name and daytime telephone number of person to contact in the United Kingdom

A. N. Cohen

01959 577172

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### Baby Feeding System

The present invention relates to a feeding system for feeding babies particularly in the first weeks of life which facilitates the baby having the appropriate nutrition levels.

5

The fastest growth occurs in the first weeks after birth and current public health advice and practice strongly supports the promotion of infant growth in humans so the infant formulae for feeding babies in the first weeks of life have been devised to encourage growth of babies.

10

The ability to accelerate growth under favourable conditions, in order to compensate for a period of nutritional deficit, is a strategy common to many developing organisms and is the basis of nutritional rehabilitation of undernourished infants and children.

15

However in healthy newborn infants, we have found from our studies that fast early growth or "over nutrition" can have long term adverse health effects in humans particularly with regard to long term vascular health relevant to the development of atherosclerosis and to the later propensity to insulin resistance and non-insulin dependent diabetes (NIDDM), while slower growth as a consequence of relative undernutrition has been suggested to have a beneficial effect, lower nutrient intake in early life programmes lower insulin resistance later in life.

20

We have also found that formula fed babies have a greater weight gain in the first two weeks of life than breast fed babies and it could be that the suggested long-term beneficial effects of breast-feeding on cardiovascular health could be a consequence of the lower nutrient intake of breast-fed babies during this critical early window.

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Co-pending patent application GB 0302929.5 describes nutrient compositions which are formulated so that a baby has the correct daily nutrition levels and we have now devised a feeding system which helps to ensure this.

- 5 According to the invention there is provided a container having a plurality of compartments containing a nutrient formula in which each compartment contains sufficient nutrient formula for a baby's daily intake matched to the average volume of breast milk consumed per day.
- 10 These levels of protein and energy are below what has been proposed for infant feeding formulae and such compositions are novel and it is surprising that they may result in better long term health for infants.

- 15 In the formula food (i.e. baby food) used in the invention, normal proteins, which are already at present used for the production of formula foods as raw materials and thus as proteins for the baby foods which can be used in the invention, all previously known protein sources, for example proteins, oligopeptides, dipeptides and/or free amino acids, which can also be present in the form of their salts, hydrochlorides, etc., can be used. Thus, bovine caseins, whey proteins and individual proteins thereof
- 20 (alpha-casein,  $\beta$ -casein, kappa-casein, alpha-lactalbumin,  $\beta$ -lactoglobulin, serum albumin, lactoferrin, immunoglobulins) and combinations of these proteins and also mixtures with other proteins, such as for example soya proteins, can be used. Other proteins of animal or plant origin, which are suitable for human nutrition, can also be used.

25

The total energy can be provided in the form of fats, and carbohydrate and proteins of the types used and approved in existing formulas can be used.

- 30 In each compartment the weight of the formula can be that which required for the daily feed and this will contain from 10 to 650 mls /day. The formula used will be the

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standard infant formula or a low nutrient formula providing 0.5 to 1.0 grams protein per 100ml and 25 to 50 kilocalories per 100ml.

5      Optionally, instead of the whole of daily requirement being in one compartment, the daily requirement can be spread over more than one compartment and, preferably, the container is marked appropriately for example the daily requirement can be divided into eight one eighth aliquots; six one sixth aliquots; four one quarter aliquots; three one third aliquots or two one half aliquots etc. so that, if the baby is on four hour feeds, each compartment can hold one sixth of the daily nutritional requirement.

10

The formula is typically fed to babies in the first two weeks of their life after which they can be fed normal feed so each container can hold fourteen days supply or contain fourteen compartments so that each container holds two weeks supply.

15      The container can be any convenient shape and can comprise, for example a sheet of cardboard, plastic or the like with the compartments being formed by a plastic bubble sealed to the sheet.

20      Alternatively the container can be a tin or box or the like containing sachets of the formula which form the compartments.

In use, the contents of each compartment can be fed to the babies as a liquid in water in accordance with existing methods of feeding babies.

25      When a baby is to be fed it is easy for the person feeding the baby to know exactly how much formula to give the baby each day so that the baby is not underfed or overfed and the formula is easy and convenient to store and use.

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## Claims

1. A container having a plurality of compartments containing a nutrient formula in which each compartment contains sufficient nutrient formula for a baby's daily intake and in which the formula comprises standard infant formula or formula providing 0.5 to 1.0 grams per 100ml of protein and 25 to 50 kilocalories per 100ml of energy.
2. A container as claimed in claim 1 in which each compartment contains from 10 to 650 mls per day or divided portions thereof.
3. A container as claimed in claim 1 in which the divided portion is divided into eight one eighth aliquots; six one sixth aliquots; four one quarter aliquots; three one third aliquots or two one half aliquots.
4. A container as claimed in claim 1 in which a pre-determined number of compartments contain sufficient nutrient formula for a baby's daily intake and in which the formula comprises 0.5 to 1.0 grams per 100ml of protein and 25 to 50 kilocalories per 100ml of energy.
5. A container as claimed in any one of claims 1 to 4 in which each container contains a plurality of sachets which contain the formula.
6. A container as claimed in any one of claims 1 to 5 in which the protein is selected from bovine caseins, whey proteins and individual proteins thereof, alpha-casein,  $\beta$ -casein, kappa-casein, alpha-lactalbumin,  $\beta$ -lactoglobulin, serum albumin, lactoferrin, immunoglobulins and combinations of these proteins and also mixtures with other proteins.
7. A container as claimed in any one of claims 1 to 6 in which the energy is in the form of carbohydrate and fat.

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8. A container as claimed in any one of claims 1 to 7 in which there are fourteen compartments.

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### Abstract

A feeding system for babies which comprises a container having a series of compartments in which each compartment contains a baby's daily feed requirement  
5 so that the baby is not over fed or under fed.